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February 4, 1999

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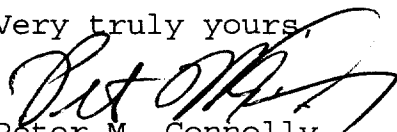
Re: CC Docket 94-102

Dear Ms. Salas:

Herewith transmitted, on behalf of United States Cellular Corporation, are an original and five copies of its "Contingent Request For Waiver" in the above-referenced proceeding.

In the event there are any questions concerning this matter, please communicate with this office.

Very truly yours,


Peter M. Connolly

Enclosures

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Before the
FEDERAL COMMUNICATIONS COMMISSION
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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of)
)
Revision of The Commission's)
Rules to Ensure Compatibility) CC Docket No. 94-102
With Enhanced 911 Emergency)
Calling Systems)

CONTINGENT REQUEST FOR WAIVER

United States Cellular Corporation ("USCC"), in accordance with the procedures set forth in the Wireless Bureau's December 24, 1998 public notice,¹ hereby files its contingent request for waiver of Section 20.18(e) of the FCC's Rules.

USCC is the parent company of cellular licensees providing service in 45 MSA and 100 RSA markets, many of which are located in rural areas. Pursuant to Section 20.18(e) of the Commission's Rules, USCC, along with all other "covered" wireless carriers, will be required by the October, 2001 "Phase II" deadline, to provide the location of all 911 calls by longitude and latitude such that the accuracy for all such calls will be 125 meters or less, using

¹ See Public Notice, "Wireless Telecommunications Bureau Outlines Guidelines For Wireless E911 Rule Waiver For Handset Based Approaches to Phase II Automatic Location Identification Requirements," CC Docket No. 94-102, DA 98-2631, released December 24, 1998 ("December 24 Public Notice").

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a root mean square (RMS) technology. USCC believes that it may be difficult or impossible to meet that Automatic Location Information ("ALI") deadline despite its best efforts and accordingly files this contingent waiver request.

**I. It May Be Impossible To Meet
The October, 2001 Deadline
Using Either A "Network" Or
"Handset" Based Technology**

Achievement of the technological capability set forth in Section 20.18(e) is one of an ever-lengthening list of FCC mandates which involve wireless carriers being required to deploy presently non-existent or commercially unavailable technologies by certain dates. As with the use of TTY devices in conjunction with digital wireless telephones, or CALEA requirements, the ability of wireless carriers to comply with Section 20.18(e) will be largely determined by technological developments which they will not control.

As is noted in the December 24 Public Notice, there are two approaches to achieving Phase II compliance, namely "network" and "handset" based approaches.

"Network" based Phase II solutions involving base station and switch modifications, will be dependent on having a sufficient number of cells in a given area to allow the system to determine where an E-911 caller is by the use of signal "triangulation" techniques. However, in many rural cellular systems, including

some of those operated by USCC, which use relatively few, high powered, omnidirectional cells, there is not now (and may not be by 2001) sufficient cell "density" to accomplish the location of callers within 125 meters or less. If, however, a new network-based technology is developed which allows rural cellular carriers to meet Phase II objectives through their networks, USCC would likely purchase it.²

If, however, such a technology is not developed, USCC will have to examine "handset-based" solutions to the ALI problem. Indeed, as will be discussed in Section II *infra*, it has already begun doing so. However, there are also significant drawbacks to this technology. For example, is the case with any telecommunications method which involves the use of global positioning satellites, it will be expensive to use and its costs

² It should also be noted that both Phase I and Phase II requirements are and will be applicable:

"only if the Public Safety Answering Point (PSAP) has requested services under those paragraphs and is capable of receiving and utilizing the data elements associated with the service, and a mechanism for recovering the costs of the service is in place."

In many states and localities, one, two or all of those conditions have not been met with respect to Phase I requirements. The ability and willingness of states and localities to meet their responsibilities under the E-911 system should also influence the FCC's actions as we approach October, 2001.

will have to be "recovered" in accordance with the rules.

Also, at present, handset based technologies have considerable difficulties "acquiring" satellites from inside vehicles or buildings. Handset ALI devices will also tend to make wireless telephones heavier than customers may wish, as well as more unwieldy, and will be a "drain" on cellular batteries, thus reducing "talk time" between charges.

Moreover, the problem of "old" telephones, i.e. those not retrofitted for ALI purposes, and roamers from systems which have adopted network rather than handset based solutions, will remain. The December 24 Public Notice (page 4) asks applicants for waiver to "address any factors and steps" that carriers might take to "minimize" the "roamer problem to the fullest extent practicable." USCC does not believe that a handset/satellite based ALI system will be able to "minimize" the problem for non-ALI-capable roamer handsets.³ If the equipment is not compatible, ALI simply won't work. The FCC should acknowledge this.

The December 24 Public Notice also specifies, at page 4, certain information which waiver applicants should include in their requests. The Wireless Bureau asks for information concerning "the level of accuracy" of carriers' proposed ALI systems; when carriers

³ USCC would obviously endeavor to retrofit the telephones of its own customers.

plan to start offering ALI-capable handsets to customers, and what additional steps carriers "will take" to minimize problems associated with non-ALI capable handsets and roamers.

Neither USCC nor any other carrier is now in a position to answer those questions meaningfully. All USCC can now do is pledge to do the best it can to acquire the E-911 and ALI technologies best suited to its customers' needs as soon as they are developed, provided it receives necessary cooperation from the relevant state and local authorities. USCC will be happy to report on its progress as October, 2001 approaches, if the FCC wishes. And if, despite its best efforts, USCC cannot comply with the Phase II deadline, it will reiterate this request for waiver at a reasonable time before October, 2001.

**II. USCC Has Preliminarily Tested
A Handset With A GPS Receiver
And Is Encouraged By The Result**

In November and December of 1998, USCC, working with Fonefinder, Inc. ("Fonefinder"), a small manufacturer and potential vendor, tested cellular telephones with a receiver capable of contacting a GPS satellite. It did so in cooperation with a local Illinois PSAP. USCC was thus able to make a preliminary assessment of the viability of that particular potential handset based solution to the ALI problem.

Preliminary results were encouraging, but not free of

problems.

The Fonefinder device provides to the GPS satellite (and then to the PSAP) the cellular telephone number of the customer as well as his/her latitude and longitude (in degrees and "digital" minutes), using "stored voice" technology.

What USCC found in repeated tests was that a cellular telephone equipped with the Fonefinder device was able to "acquire" the relevant GPS satellite while outdoors roughly as fast as a Garmin GPS 12 radio receiver, that is, in about 15-50 seconds.

However, the Fonefinder-equipped cellular telephone took between 7 and 25 minutes to reach the GPS satellite while being used in vehicles or indoors. That would obviously be an unacceptable length of time in an emergency.

Also, the Fonefinder device caused a considerable drain on the cellular telephone's battery. With the GPS capability activated, the cellular telephone's "standby" time was reduced from 12 to 4 hours following charging. USCC's engineers estimated that post-charging "talk time" would be reduced by 30-40%.

USCC also experienced difficulty because the Fonefinder device provided information in degrees and "digital" minutes, rather than in degrees, minutes, and seconds. The PSAP with which USCC worked in the trial had to convert the degrees and digital minutes manually into the minutes, degrees, and seconds which its computers

were prepared to accept.

Before USCC could undertake a national trial with the Fonefinder device, this coordinate discrepancy will have to be corrected.

Also, USCC understands the Fonefinder device to be only in the beginning stages of prototype production, making more than a very limited number of devices difficult to obtain.

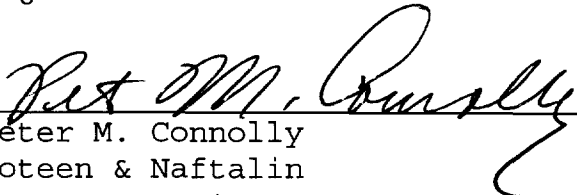
USCC would stress that it considers the Fonefinder device to be a pioneering and valuable technological accomplishment. However, a great deal of research and testing will have to be done before it can be determined whether it can constitute the basis of a nationwide handset-based ALI solution for USCC. And whether that or a similar technology will meet Phase II requirements, will also be determined, in part, by how flexibly the FCC approaches the ALI issue in the next two and a half years.

Conclusion

For the foregoing reasons, USCC requests a waiver of Section 20.18(e) of the Rules if the FCC eventually determines that USCC cannot comply with that rule despite its best efforts. USCC also offers to apprise the FCC of its progress as this process moves forward.

Respectfully submitted,

UNITED STATES CELLULAR CORPORATION

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February 4, 1999

Its Attorneys